

REMARKS/ARGUMENTS

Claims 1-12 are pending. By this amendment applicants have amended claim 8 and added new claims 13-20 to further prosecution. Support for new claims 13-18 can be found, *inter alia*, at paragraph [0025] of the present specification. New claims 19 and 20 correspond to combinations of pending claims. Therefore, no new matter has been added by this Amendment. Upon entry of this Amendment, claims 1-20 will be pending and under examination.

35 U.S.C. §101 and §112, Second Paragraph

The Examiner rejected claim 8 under 35 U.S.C. §112, second paragraph, as allegedly indefinite, and under §101 as being directed to a use.

In response, applicants have amended claim 8 to provide a method having defined elements. Applicants maintain that this amendment obviates the Examiner's rejections.

35 U.S.C. §103

The Examiner rejected claims 1, 2 and 4-12 under 35 U.S.C. §103 as allegedly obvious over Fuchs in view of Nair and Oita. The Examiner also rejected claim 3 under 35 U.S.C. §103 as allegedly obvious over Fuchs, Nair and Oita in view of Shanbrom.

In response, applicants respectfully traverse the Examiner's rejections, for the reasons set forth below.

Fuchs

The teaching of Fuchs et al. relates to an isotonic fruit juice beverage enriched with mineral substances, characterized in that the mineral substances are added to the fruit juice such as acerola fruit juice. However, Fuchs et al. neither discloses nor suggests that acerola fruit juice has a bacterial growth inhibition effect or bacteriostatic effect.

Nair

The teaching of Nair et al. relates to dietary food supplements useful for the relief of pain or inflammation. Nair et al. also teaches 1) the dietary food supplements contain fruit extracts including acerola fruit, 2) the anti-inflammatory activity is mediated through the inhibition of cyclooxygenase, and 3) the inhibitory effect is mediated by a flavonoid, in particular, anthocyanins, which derived from fruit extracts. However, Nair et al. neither discloses nor suggests that acerola fruit juice has a bacterial growth inhibition effect or bacteriostatic effect.

Oita

Oita teaches antibacterial effect of grape polyphenols against thermoacidophilic bacteria, *Alicyclobacillus acidoterrestris*. On the other hand, Oita also describes in "3. Discussion" on page 555 of the document that "---- Therefore, explaining the reasons why *A. acidoterrestris* cannot grow in a red grape juice by synergistic antibacterial effect of the various polyphenols is difficult at this stage. Accordingly, further investigation is required.----". Oita neither discloses nor suggests the relationship between acerola fruit juice and *Alicyclobacillus acidoterrestris*. The English translation of the first paragraph of the section: "3. Discussion" of Oita is as follows:

"3. Discussion

The present research newly revealed several varieties of materials among grape polyphenols that inhibit the growth of A. acidoterrestris and also revealed that some of the materials provide additive antibacterial effect. However, MIC (Minimum Inhibitory Concentration) of these polyphenols are several tens to several hundreds µg/ml, and the MIC of these polyphenols are fairly higher than the concentration of the individual polyphenol (equal to or less than 3µg/ml) ^{8) 9)} in a fruit juice. Therefore, explaining the reasons why A. acidoterrestris

cannot grow in a red grape juice by synergistic antibacterial effect of the various polyphenols is difficult at this stage. Accordingly, further investigation is required."

Shanbrom

Shanbrom teaches an anti-bacterial and anti-viral substance, or a coloring factor, which is prepared from the juice of cranberry and other fruits or vegetables. However, it appears that a method for making dried products from desugared fruits is not described.

The Examiner maintains that Fuchs et al. discloses fruit juice beverage including acerola fruit juice, Nair et al. teaches that acerola fruit contains polyphenols such as anthocyanins, anthocyanadins (hydrolyzed anthocyanins), flavonoids, and cyanindins etc., and Oita teaches that polyphenols show growth inhibitory activity against thermo tolerant bacteria (*Alicyclobacillus acidoterrestris*). Thus, according to the Examiner, it would have been obvious for a person skilled in the art that the polyphenols in acerola fruit show growth inhibitory activity against thermo tolerant bacteria (*Alicyclobacillus acidoterrestris*).

However, the teaching of Oita is silent about growth inhibitory activity of polyphenols as a whole against thermo tolerant bacteria. Instead, Oita teaches that among polyphenols originating from grape, specific polyphenols such as resveratrol, ferulic acid, p-coumalic acid, p-hydroxybenzoic acid and "Kyoho" proanthocyanidine show growth inhibitory activity against thermo tolerant bacteria (*Alicyclobacillus acidoterrestris*) (English abstract of Oita). In addition, Oita teaches that the MIC of those polyphenols are fairly higher than the concentration of the individual polyphenols in a fruit juice (page 555, Discussion of Oita). That is, a person skilled in the art would have readily recognized that certain polyphenols have growth inhibitory activity against thermo tolerant bacteria (*Alicyclobacillus acidoterrestris*) in view of the teaching of Oita, but would have also recognized that any polyphenols at the concentration typical in fruit juice

would not show such growth inhibitory activity. In fact, Oita concludes that explaining the reasons why *A. acidoterrestris* cannot grow in a red grape juice by synergistic antibacterial effect of the various polyphenols is difficult at this stage (page 555, Discussion of Oita).

Even if it were obvious to a person skilled in the art that acerola fruit contains polyphenols in view of the combination of Fuchs and Nair (which applicants do not concede), the relationship between polyphenols in the fruit juice and growth inhibitory activity against thermo tolerant bacteria (*Alicyclobacillus acidoterrestris*) would have been unclear according to the teaching of Oita. Therefore, it would not have been obvious for a person skilled in the art to practice the invention of claim 1 even if Oita were combined with the above two references cited. In addition, Oita teaches only specific polyphenols in grape fruit juice, but neither discloses nor suggests polyphenols in acerola fruit. Thus, the combination of the above two cited references and Oita would not have rendered the claimed invention obvious.

As mentioned above, the invention of claim 1 of the present application would have been unobvious even if Fuchs, Nair, and Oita were combined, and therefore should be allowable. In addition, the remaining claims should also be allowable for the reasons set forth in connection with claim 1.

Any additional fees or charges required at this time in connection with the application may be charged to our Patent and Trademark Office Deposit Account No. 03-2412.

Respectfully submitted,
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